

REMARKS

In the last Office Action, the Examiner rejected claims 36-39, 41-43, 45-47 and 49-51 under 35 U.S.C. §103(a) as being unpatentable over JP 10-112075 to Hiroshi in view of U.S. Patent No. 5,963,532 to Hajjar. Claims 40, 44, 48 and 52 were rejected under 35 U.S.C. §103(a) as being unpatentable over Hiroshi in view of Hajjar and further in view of EP 552887 or EP 376673. Additional art was cited of interest.

In accordance with the present response, independent claims 36, 41, 45 and 49 have been amended only to define with more particularity the structure of the medium which has one (claims 36, 41) or multiple (claims 45, 49) information unit fields in which the linear mark (claim 36) or linear marks (claims 41, 45, 49) are disposed. This structural feature is described at pages 45-46 of the specification and shown in Figs. 3A-3C, for example. Claims 51 and 52 have been amended to conform to the amendment to independent claim 49.

The amendment to the claims made herein does not raise new issues requiring further search and/or consideration. Instead, independent claims 36, 41, 45 and 49 have been amended only to define with more particularity the structure of the medium which patentably distinguishes the claims over the prior art of record, and claims 51 and 52 have been amended only to conform to the amendment to claim 49,

thereby placing the application in condition for allowance or otherwise reducing the issues which remain for appeal.

Applicants request reconsideration of their application in light of the foregoing amendments and the following discussion.

Brief Summary of the Invention

The present invention is directed to an information reproducing apparatus and to an information reproducing method.

Conventional information reproducing apparatuses which reproduce information from a medium utilizing near-field light are known. However, as described in the specification (pgs. 1-3), the conventional information reproducing apparatuses have not been able to provide high-density reproduction of information.

The present invention overcomes the drawback of the conventional art. Figs. 1-4 show an embodiment of an information reproducing apparatus according to the present invention embodied in the claims. The information reproducing apparatus has a light source 102 for generating linearly polarized light, and a medium 101 having an information unit field and only a single linear mark 7 disposed in the information unit field. An optical head 104 is disposed

between the light source 102 and the medium 10 and has a fine aperture 103. The light source 102 includes a polarized light control portion for controlling the linearly polarized light generated by the light source 102 to pass through the fine aperture 103 of the optical head 104 to generate near-field light having a preselected polarization direction and to irradiate the linear mark 7 disposed in the information unit field of the medium 101 with the near-field light so that the preselected polarization direction of the near-field light is orthogonal to a longitudinal axis of the linear mark 7. A detector 105 detects light scattered by the linear mark 7 irradiated with the near-field light.

In another embodiment shown in Figs. 3A-3C, the medium has an information unit field and a plurality of linear marks 8' disposed in the information unit field and extending in different directions from one another. For example, linear marks 8' extending in horizontal and vertical directions form a plus (+) sign shape in Fig. 3A.

By the foregoing construction, the present invention provides a high-density information reproducing apparatus. More specifically, in the information reproducing apparatus of the present invention, the light scattered by the linear mark of the medium has a high intensity because the near-field light irradiated on the linear mark has a polarization

direction which is orthogonal to a longitudinal axis of the linear mark. A signal corresponding to the high-intensity scattered light can then be processed to obtain highly accurate reproduction information.

Traversal of Prior Art Rejections

Claims 36-39, 41-43, 45-47 and 49-51 were rejected under 35 U.S.C. §103(a) as being unpatentable over Hiroshi in view of Hajjar. Applicants respectfully traverse this rejection and submit that the combined teachings of Hiroshi and Hajjar do not disclose or suggest the subject matter recited in amended independent claims 36, 41, 45 and 49 and the corresponding dependent claims.

Each of amended independent claims 36, 41 and 45 is directed to an information reproducing apparatus and amended independent claim 49 is directed to an information reproducing method. Claim 36 requires a medium having an information unit field and only a single linear mark disposed in the information unit field. Claim 41 requires a medium having an information unit field and a plurality of linear marks disposed in the information unit field and extending in different directions from one another. Claims 45 and 49 require a medium having a plurality of information unit fields and a plurality of linear marks disposed in each of the

information unit fields and extending in different directions from one another. No corresponding features are disclosed or suggested by the combined teachings of Hiroshi and Hajjar.

The primary reference to Hiroshi discloses an information recording medium (Figs. 1 and 28) having plural information unit fields 4 (i.e., pit sections). Plural linear marks are disposed in each of the information unit fields 4. Thus Hiroshi does not disclose or suggest only a single linear mark disposed in one of the information unit field, as recited in amended independent claim 36.

Moreover, in Hiroshi the linear marks disposed in the information unit fields 4 of the medium extend in the same direction to one another (i.e., the linear marks are parallel to one another). In contrast, each of amended independent claims 41, 45 and 49 requires a plurality of linear marks disposed in the information unit field of the medium and extending in different directions from one another (claim 41), and a plurality of information unit fields and a plurality of linear marks disposed in each of the information unit fields and extending in different directions from one another (claims 45, 49).

The secondary reference to Hajjar has been cited by the Examiner for its disclosure of a near-field optical system for generating near-field light. However, Hajjar does not

disclose or suggest the specific medium recited in amended independent claims 36, 41, 45 and 49. Since Hajjar does not disclose or suggest this feature, it does not cure the deficiencies of Hiroshi. Accordingly, one ordinarily skilled in the art would not have been led to modify the references to attain the claimed subject matter.

Claims 37-39, 42-43, 46-47 and 50-51 depend on and contain all of the limitations of amended independent claims 36, 41, 45 and 49, respectively, and, therefore, distinguish from the references at least in the same manner as amended claims 36, 41, 45 and 49.

In view of the foregoing, applicants respectfully request that the rejection of claims 36-39, 41-43, 45-47 and 49-51 were rejected under 35 U.S.C. §103(a) as being unpatentable over Hiroshi in view of Hajjar be withdrawn.

Claims 40, 44, 48 and 52 were rejected under 35 U.S.C. §103(a) as being unpatentable over Hiroshi in view of Hajjar and further in view of EP 552887 or EP 376673. Applicants respectfully traverse this rejection and submit that the combined teachings of Hiroshi, Hajjar and EP 552887 or EP 376673 do not disclose or suggest the subject matter recited in dependent claims 40, 44, 48 and 52.

Hiroshi in view of Hajjar do not disclose or suggest the subject matter recited in amended independent claims 36, 41, 45 and 49 as set forth above for the rejection of claims 36-39, 41-43, 45-47 and 49-51 under 35 U.S.C. §103(a). Claims 40, 44, 48 and 52 depend on and contain all of the limitations of amended independent claims 36, 41, 45 and 49, respectively, and, therefore, distinguish from the references at least in the same manner as amended claims 36, 41, 45 and 49.

The Examiner cited the secondary references to EP 552887 and EP 376673 for their disclosure of optical systems having both servo and data information at different directions. However, EP 552887 and EP 376673 do not disclose or suggest the specific medium recited in amended independent claims 36, 41, 45 and 49, from which claims 40, 44, 48 and 52 respectively depend. Since EP 552887 and EP 376673 do not disclose or suggest this feature, it does not cure the deficiencies of Hiroshi as modified by Hajjar. Accordingly, one ordinarily skilled in the art would not have been led to modify the references to attain the claimed subject matter.

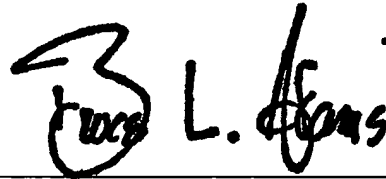
In view of the foregoing, applicants respectfully request that the rejection of claims 40, 44, 48 and 52 under 35 U.S.C. §103(a) as being unpatentable over Hiroshi in view of Hajjar and further in view of EP 552887 or EP 376673 be withdrawn.

The amendment to the claims made herein does not raise new issues requiring further search and/or consideration. Instead, independent claims 36, 41, 45 and 49 have been amended only to define with more particularity the structure of the medium which patentably distinguishes the claims over the prior art of record, and claims 51 and 52 have been amended only to conform to the amendment to claim 49, thereby placing the application in condition for allowance or otherwise reducing the issues which remain for appeal.

In view of the foregoing amendments and discussion,
the application is believed to be in allowable form.
Accordingly, entry of this amendment and favorable
reconsideration and allowance of the claims are most
respectfully requested.

Respectfully submitted,

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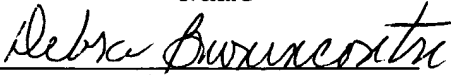
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